



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/774,370

02/10/2004

Masafumi Mochizuki

9528

24956

7590

08/10/2007

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.

1800 DIAGONAL ROAD

SUITE 370

ALEXANDRIA, VA 22314

EXAMINER

TUGBANG, ANTHONY D

ART UNIT

PAPER NUMBER

3729

MAIL DATE

DELIVERY MODE

08/10/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/774,370

Applicant(s)

MOCHIZUKI ET AL.

Examiner

A. Dexter Tugbang

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-15 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-15 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 10/046,973.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 27, 2007 has been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

3. Claims 12, 13, 14 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Mallary et al, Partee and Takeura et al.

Mallary discloses a method for manufacturing at least a single pole type magnetic head (in Figs. 1 and 4) comprising: forming a groove (not labeled in Fig. 4) on an inorganic insulating layer (e.g. 15); forming a magnetic layer (e.g. 16) serving as a magnetic main pole of a write head in the groove; and forming a recess in the magnetic on a trailing side of an air bearing surface, where the recess is formed by ion milling (e.g. 480, col. 7, lines 32-50).

It is noted that the insulating layer (e.g. 15) of Mallary is formed of a material of alumina, i.e. aluminum oxide (col. 6, lines 32-35), as alumina is inherently an inorganic insulating material. As evidence of inherency that alumina is an inorganic insulating material, the examiner cites Takeura et al (col. 3, lines 24-25).

It is further noted that the recess of the magnetic layer (e.g. 16) of Mallary is inherently formed on a trailing side (left vertical surface of block 10 in Fig. 1) of an air bearing surface. The air bearing surface is discussed by Mallary at col. 6, lines 7+. As evidence of inherency, Partee shows in equivalent magnetic head (in Fig. 1) having a trailing side (e.g. 11, left vertical side of block 12) of an air bearing surface.

Regarding Claim(s) 18, Mallary (in Fig. 4) shows the magnetic layer (e.g. 16), after the recess has been formed, with a first horizontal line segment and a second angled line segment with the second angled line segments having at least one point (e.g. the intersection) closer to the first line segment than opposite ends of the second line segment.

Claim Rejections - 35 USC § 103

4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mallary et al in view of Cohen et al.

Mallary discloses the claimed manufacturing method as relied upon above in Claim 12. Mallary does not appear to mention that the groove formed in the inorganic insulating layer is formed by using a resist pattern on the insulating layer and then etching using the resist pattern as a mask.

Cohen shows that it is conventional to pattern an inorganic insulating layer of alumina (e.g. 40) by using a resist pattern (e.g. 42, 44, 46 in Fig. 3C) to etch a groove in the insulating layer (see sequence of Figs. 3C to 3D, col. 8, lines 8+).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Mallary by utilizing the conventional resist and

Art Unit: 3729

etching process of Cohen, to positively produce a fine patterned groove in the inorganic insulating layer of alumina.

Response to Arguments

5. The applicant(s) arguments filed June 1, 2007 have been fully considered but they are not persuasive.

The applicant(s) argue that the prior art does not teach a "write head". The applicant(s) appear to be saying that what Mallary teaches (at col. 4, lines 65-67) is somehow limited to a read head only, not a write head.

This is simply not true as the applicant(s) have apparently overlooked the entire disclosure of Mallary. After having considered the entire disclosure of Mallary, Mallary teaches that his invention is directed to either a read head, write head, or a combination read head and write head (col. 2, lines 54-65). Furthermore, look at Mallary claims, noting Claims 10 and 12, which are directed to a combination read and write head as the scope of Mallary's invention includes a "write head".

Accordingly, the rejections above are hereby maintained.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Dexter Tugbang whose telephone number is 571-272-4570. The examiner can normally be reached on Monday - Friday 7:30 am - 4:00 pm.

Art Unit: 3729

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/A. Dexter Tugbang/
Primary Examiner
Art Unit 3729**

August 3, 2007